

C L A I M S

1. An expansion device for expanding a pipe, which expansion device has a front end and a rear end and comprises
  - an expansion cone tapering in forward direction towards the front end of the expansion device,
  - an anchor capable of being selectively anchored to the inner surface of the pipe,
  - an actuator for moving the expansion cone in forward direction through the pipe, the actuator including a first member connected to the expansion cone, a second member axially movable relative to the first member, the second member being connected to the anchor, and hydraulic drive means for axially moving the first and second members relative to each other, wherein the hydraulic drive means is adapted to move the expansion cone in forward direction through the pipe when the anchor is anchored to the inner surface of the pipe, and wherein the hydraulic drive means is adapted to move the first and second members relative to each other so as to move the anchor in forward direction through the pipe when the anchor is released from the inner surface of the pipe.
2. The expansion device according to claim 1, wherein the second member is an elongated cone-guide, wherein the anchor is a retrievable end anchor arranged at one end of the elongated cone-guide which end anchor is capable of cooperating with the inner surface of the pipe to prevent movement of the elongated cone-guide relative to the pipe, when, during normal operation, the expansion cone is displaced relative to the elongated cone-guide in the

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towards the front end of the expansion device,  
- an anchor capable of being selectively anchored to  
the inner surface of the pipe,

- an actuator for moving the expansion cone in forward  
direction through the pipe, the actuator including a

first member connected to the expansion cone, a second  
member axially movable relative to the first member, the  
second member being connected to the anchor, and  
hydraulic drive means for axially moving the first and  
second members relative to each other, wherein the

hydraulic drive means is adapted to move the expansion  
cone in forward direction through the pipe when the  
anchor is anchored to the inner surface of the pipe, and  
wherein the hydraulic drive means is adapted to move the

first and second members relative to each other so as to  
move the anchor in forward direction through the pipe  
when the anchor is released from the inner surface of the  
pipe.

2. The expansion device according to claim 1, wherein  
the second member is an elongated cone-guide, wherein the

anchor is a retrievable end anchor arranged at one end of  
the elongated cone-guide which end anchor is capable of  
cooperating with the inner surface of the pipe to prevent  
movement of the elongated cone-guide relative to the  
pipe, when, during normal operation, the expansion cone  
is displaced relative to the elongated cone-guide in the

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forward direction, wherein the hydraulic drive means includes an annular piston protruding from the elongated cone-guide, wherein the first member is a cylinder slidingly arranged over the annular piston and having annular sealing rims at either end of the cylinder which define a front chamber and a rear chamber, respectively, and wherein the actuator includes a fluid supply for alternately supplying pressure fluid to the front chamber to displace the expansion cone in forward

5 direction relative to the elongated cone-guide and to the rear chamber to displace the elongated cone-guide in forward direction relative to the expansion cone.

10 3. The expansion device according to claim 1 or 2, which further comprises a middle anchor joined to the expansion cone, which middle anchor is capable of cooperating with the inner surface of the pipe to prevent movement of the expansion cone relative to the pipe, when, during normal operation, the elongated cone-guide is displaced relative to the expansion cone in the forward direction,

15 4. The expansion device according to any one of the claims 1-3, further comprising a second retrievable end anchor arranged at the free end of the elongated cone-guide, which end anchor is capable of cooperating with the inner surface of the pipe to prevent movement of the elongated cone-guide relative to the pipe, when, during normal operation, the expansion cone is displaced relative to the elongated cone-guide in the forward direction.

20 5. The expansion device according to any one of the claims 2-4, wherein the fluid supply includes a front passage arranged near the front of the annular piston, a rear passage arranged near the rear of the annular piston, and a flow control means for allowing or preventing pressure fluid from flowing through the front or through the rear passage.

6. The expansion device according to claim 5, wherein  
the elongated cone-guide is a double-walled tube having  
an annular chamber between the walls of the double-walled  
tube, wherein the front passage and the rear passage  
5 extend through the walls of the double-walled tube,  
wherein the flow control means includes a sliding valve  
arranged in the annular chamber and provided with a valve  
passage, which sliding valve can be displaced between a  
front position in which the valve passage is at the  
10 position of the front passage and a rear position in  
which the valve passage is at the position of the rear  
passage, and wherein the actuator further includes  
driving means for displacing the sliding valve between  
the front position and the rear position.
- 15 7. The expansion device according to claim 6, wherein  
the driving means includes a releasable spring-loaded  
pusher arranged an end of the expansion device, wherein  
the spring of a pusher is loaded by the cylinder  
approaching the spring-loaded pusher, and wherein the  
20 pusher is released by the cylinder being at the pusher.